

CLAIMS

1. An apparatus for heating and melting solid lubricants in the delivery drum (4) characterised in that it comprises
  - a) a heating element (1) constituted by armoured resistors shaped as concentric rings and junction spokes
  - b) a hoist (2)
  - c) vertical rods (6), not heated, which connect the heating elements (1)
  - d) a thermal sensor (5)
  - e) a second thermal sensor (7) mounted on the vertical rods (6)
  - f) a transfer pump (8)
  - g) a bottom valve (9) mounted at the foot of the suction tube (11)
  - h) a heated tube (10) for the delivery of the product.
2. The apparatus for heating and melting solid lubricants as claimed in claim 1, characterised in that the heating element (1) is subjected to the thrust deriving from its own weight and that of the connected movable masses, such as the rod of the hoisting cylinder, the load-bearing arms, the transfer pump and the suction tube.
3. The apparatus as claimed in claim 1, characterised in that the delivery tube (10) is heated by circulation

of a diathermic fluid within a jacket positioned coaxially.

4. A method of operation of the apparatus as claimed in claims 1 and 2, characterised in that the temperature of the heating element (1) is controlled by means of a thermal sensor (5) at a value T1 that is sufficient for melting but such as to prevent a harmful overheating of the product.
5. The method as claimed in claim 4, characterised in that the heating element (1) after reaching the lowest point of its travel, is kept at the temperature T1 until all the mass is melted.
6. The method as claimed in claims 4 and 5, characterised in that temperature control passes to a second sensor (7), mounted on the rods (6) at about one third of their length starting from the bottom, which regulates the maintenance temperature T2.

**AMENDED CLAIMS**

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original claims 1-6 replaced by new claims 1-6 - (2 pages)]

1. An apparatus for heating and melting solid lubricants in a delivery drum (4) characterised in that it comprises
  - a) a heating element (1) constituted by armoured resistors shaped as concentric rings and junction spokes
  - b) a hoist (2) bearing the heating element (1)
  - c) vertical rods (6), not heated, which connect the heating elements (1) to load-bearing arms
  - d) a thermal sensor (5)
  - e) a second thermal sensor (7) mounted on the vertical rods (6)
  - f) a transfer pump (8)
  - g) a bottom valve (9) mounted at the foot of a suction tube (11)
  - h) a delivery tube (10) for the delivery of a product (3).
2. An apparatus for heating and melting solid lubricants as claimed in claim 1, characterised in that the heating element (1) is subjected to the thrust deriving from its own weight and that of movable masses due to the rod (6) of the hoisting cylinder, the load-bearing arms, the transfer pump (8) and the suction tube (11).
3. An apparatus as claimed in claim 1, characterised in that the delivery tube (10) is heated by circulation of a diathermic fluid within a jacket positioned coaxially.
4. A method of operation of an apparatus as claimed in claims 1 and 2, characterised in that the temperature of the heating element (1) is controlled by means of thermal

sensors (5, 7) at values of T1 and T2 which are predetermined for melting but such as to prevent a harmful overheating of the product.

5. A method as claimed in claim 4, characterised in that after reaching the bottom dead centre of the drum (4) liquefying the entire mass of the product (3) the heating element (1) controlled by sensor (5) is kept at the temperature T1 until all the mass is melted.
6. A method as claimed in claim 4, characterised in that temperature control passes to a second sensor (7), mounted on the rods (6) at about one third of their length starting from the bottom, which regulates the maintenance temperature T2.